Gold Wing Road Riders Association (GWRRA)
Rider Education Program (REP) White Paper
"Proper Use of the Modular Helmet"

Executive Summary: The Gold Wing Road Riders Association (GWRRA) maintains and conducts refresher training for its' members through its' World Class Rider Education Program (REP) The GWRRA REP is multifaceted and consists of riding courses for both the rider and co-rider to improve and refresh skills, seminars addressing riding safety, technique and common motorcycling environment subjects, and the ability and skill to perform lifesaving techniques such as Cardio-Pulmonary Resuscitation (CPR) and first aid (FA) in the absence or before the First Responder arrives on the scene. One of the points emphasized by the REP is the need to ride safely through the use and wear of personal protective equipment of which the motorcycle helmet is the most important article of personal safety. Motorcycle helmets are available in a variety of shapes, styles and fashions, the most common of these are versions identified as the "Half" helmet, the "Three Quarter" helmet, the "Full Face" helmet and a variant of the Full Face called a "Modular", "Flip Front", or "Flip Face" and other identifying names. This white paper addresses the Modular helmet and the risks associated with wearing the helmet in different configurations, most notably with the chin bar or front portion of the helmet raised while the motorcycle is it motion. Many GWRRA members use their Modular helmets in this manner.

To ensure the presentations of the REP accurately address risk concerning the proper wearing of this helmet this investigation was conducted. The process of the investigation was to query the Original Equipment Manufacturer (OEM) concerning their use policy and guidance; to investigate other sources identifying risk(s) associated with modular motorcycle helmet use and wear and to arrive at a consensus for inclusion in the REP rider education training curricula. The following was determined:

- The vast majority of OEMs specify that the chin bar portion was designed to be worn in the down and locked position while the motorcycle is in operation.
- Few OEMs will enforce this policy due to the fact that they have no control over how the rider or co-rider uses the product. The majority of OEMs do "RECOMMEND" or "SUGGEST" the way the modular helmet should be worn.
- All OEMs concur that the helmet is the most important piece of personal protective equipment (PPE) the motorcyclist can use.
- The Hurt Report is acknowledged as a major factor in determining PPE to wear and further states the more common helmet impact points by percentage for the user.

- The chin bar, when worn in the up position, may present a safety hazard if an emergency stop is required by falling from the upright position (very few lock in place) and blocking the operators view
- In the upright position the chin bar contributes to rider fatigue by being adversely affected by wind and the environment of the ride.
- It is up to the user to determine how they intend to wear the Modular helmet and therefore accept the risk of that configuration.

The Modular helmet was designed to provide the rider and co-rider with the ability to raise the chin bar so that it may be donned and/or removed more easily, facilitate conversations when stopped without requiring removal of the helmet and also provide ease of access should the wearer decide to eat or drink without removing the helmet. Raising the chin bar and riding with the chin bar in the upright position essentially converts the helmet to a Three Quarter model. However, additional issues become apparent when this is done. Fatigue is induced faster when the chin bar creates more resistance to the air flow, the chin bar may not stay in the upright position possibly generating a hazard to vision, and if the rider's head comes into contact with the ground during a crash the chin bar could act as a lever twisting the user's head and neck with negative results. It has also been noted in the referenced reports the highest impact percentage occurs in the area where the chin bar (face and chin) is located. It is recommended the Modular helmet be worn with the chin bar down and locked while the motorcycle is in operation to minimize risk of injury to the user.

Task: This white paper was developed in response to tasking by Harry Dollarhide, Director of Rider Course Programs, to investigate proper wearing and use of the Modular style motorcycle helmet. The modular style helmet is distinguished by its configuration.

Qualifier: This white paper does not attempt to test or certify any modular helmet or modular helmet design. To accomplish the goals of this investigation a broad listing (by no means inclusive) of the manufacturers of the more popular modular helmet models was used to form a contact list to ask their policy regarding the use of the front piece of the modular helmet.

References:

A. Hurt, H.H., Ouellet, J.V., and Thom, D.R. *Motorcycle Accident Cause Factors and Identification of Countermeasures Volume 1: Technical Report*. U.S. Department of Transportation, Washington: GPO, Jan. 1981. Print.

B. Deitmar Otte Motorcycle Impact Diagram, Proceedings of the 1991 International Motorcycling Conference.

C. http://www.rideicon.com/2014/04/introducing-the-airframe-statistic

D. https://rideapart.com/articles/icon-airframe-statistic

E. http://saferoads.org/issues/motorcycle-helmet

F. Code of Federal Regulations, Title 49 United States Code – Transportation, Subtitle B - Other Regulations Relating to Transportation, Chapter V - National Highway Transportation Safety Administration, Department Of Transportation, Part 571 - Federal Motor Vehicle Safety Standards (FMVSS) Number 218 – Motorcycle Helmets

G. Economic Commission of Europe Standard E/ECE/324, E/ECE/505 Reg. No. 22

H. European Cooperation in Science and Technology (Cost) Report (co-authored by Dr. Otte) 327 p.52 (1998)

I. Centers for Disease Control and Prevention. "Motorcycle Safety Guide: Prevention that Works." *CDC.gov*. CDC, 13 June 2013. Web. 1 Apr. 2014. (http://www.cdc.gov/motorvehiclesafety/mc/guide/prevention.html)

J. Dearborn, Charlie. "Re: No Helmet Thoughts", *Maine Biker Network*. Jeff Neil, 22 Jan. 2014. Web. 1 Apr. 2014. (http://www.cdc.gov/motorvehiclesafety/mc/guide/prevention.html)

K. "Dietmar Otte." *Helmet Optimization in Europe*. COST and European Science Foundation, n.d. Web. 7 Apr. 2014

L. Motorcycle Safety Foundation, *Basic Rider Course: Rider Handbook*., Irvine, CA:

M. Otte, D., B. Chinn, D. Doyle, K. Sturrock, and E. Schuller. *Interim Report: Database Cost 327 Accident Description and Analysis of Motorcycle Safety Helmets*. Cordis, May 1998. Web. 1 Apr. 2014 (http://cordis.europa.eu/cost-transport/src/cost-327.htm)

N. Proficient Motorcycling, David L. Hough, Motorcycle Consumer News, Bow Tie Press, 1889540-53-6

O. Motorcycling Excellence, MSF, Whitehorse Press, 1-884313-01-9

Description: The modular helmet is composed of two shell pieces, an extruded polystyrene liner (crushable liner), comfort padding (which may be removable) and a retention system. The distinguishing factor of this particular helmet style is that the front portion or piece of the shell where the chin bar and visor reside is hinged on either side allowing the wearer to actuate a latching mechanism and rotate the front potion up to a semi-locked position in front of the main shell section. When the user applies pressure downward the front piece rotates down until it makes contact with and latches to the main shell; essentially forming or acting as a full face helmet style. Latching mechanisms have improved since this helmet style was introduced several years ago and most are made of metal components at this time. The modular helmet is generally (manufacturer and model dependent) certified as a Department Of Transportation (DOT) compliant piece of personal protective equipment satisfying the requirements specified in the Code of Federal Regulations, Title 49 United States Code – Transportation, Subtitle B - Other Regulations Relating to Transportation, Chapter V - National Highway Transportation Safety Administration, Department Of Transportation, Part 571 - Federal Motor Vehicle Safety Standards (FMVSS) Number 218 – Motorcycle Helmets. To date, the Snell Memorial Foundation, an independent organization which also tests helmets, has addressed the modular helmet and its crash worthiness but none are currently included in the Motorcycle (M) 2010 or M 2015 lists. The modular design allows the wearer to more easily don the helmet by raising the front piece allowing for more spread of the main portion of the shell. It also facilitates conversation when necessary or desired by raising the front portion. The integrity of the helmet may be weakened when in the raised position.

The issue intended to be addressed is whether the front piece may be worn in the raised position while the user operates a motorcycle or whether the front piece should be worn in the down and latched position as designed.

The following manufacturers were contacted via e-mail during this investigation:

OEM Helmet Manufacturer Queried	**Responded to Query**			**Attachment ##**
	1st Try 9/15/2015	2nd Try 10/6/2015	3rd Try 10/19/2015	
AFX www.afxhelmets.com	No	No	Yes 10/19/2015	2
AGV www.agv.com	No	No	No online response received. Overseas company – did not	3

			contact via telecon	
BELL www.brgsports.com	Response received 9/18/2015			4
FULMER www.fulmerhelmets.com info@fulmerhelmets.com	No	No	No response on line Contacted via telecon 10/22/2015	5
GMAX www.wps-inc.com	No	No	No response on line Contacted via telecon 10/22/2015 Awaiting Tech Spt.	6
HJC www.hjchelmets.com info@hjchelmets.com	No	No	No response on line Contacted via telecon 10/22/2015	7
ICON www.rideicon.com	Response received 9/18/2015			8
JOE ROCKET www.joerocket.com	Response received 9/18/2015			9
KABUTO www.kabutousa.com	No	Partial response received 10/6/2015 Final response received 10/8/2015		10
LAZER info@lazerhelmets.com	No	No	Response received 10/27/2015	11
LS2 www.Ls2helmets.com Ls2info@Ls2helmets.com	No	No	Initial response received	12

			10/20/2015 Final response received 10/20/2015	
NOLAN www.nolanhelmets.com jp@cimaint.com	No	No	Initial response received 10/19/2015 to be followed by telecon with S. Knaff 10/22/2015	13
NOLAN N103 Helmet User's Manual Excerpt				14
SCHUBERTH www.schuberthnorthamerica.com	No	Response received 10/6/2015		15
SCORPION www.scorpionusa.com	Response received 9/18/2015			16
SHARK www.Shark-helmets.com		Added	Response received 10/19/2015	17
SHOEI www.shoei.com	Response received 9/18/2015			18
Shoei Neotec Manual Excerpt	Response received 9/18/2015			19
SPEED AND STRENGTH www.Ssgear.com	No	No	Response received 10/19/2015 Adam Fox Telecon 10/21/2015	20
SUOMY www.suomy.com	No	No	Initial response received 10/19/2015	21
TORC www.torchelmet.com	No	No	No response to online query – No	22

			tel/no listed	
VEGA www.vegahelmet.com	Yes 9/18/2015			23
Snell Memorial Foundation (SMF) www.smf.org			Response received 10/20/2015	24
Safety in Numbers: Deitmer Otte's Motorcycle Helmet Impact Diagram				25

The letter at Attachment 1 was used to explain the focus of the investigation and information desired to the manufacturers. In most cases the letter was included as an attachment requesting the desired information. In some cases the customer service automated query screen was used when no e-mail was included on the manufacturer website or could be found.

The manufacturers who responded to the inquiry are listed in the above table. Their recommendations, comments and or warnings are noted in the following paragraphs:

Determination of Query:

The responses received from the Original Equipment Manufacturers (OEMs), varied as one might expect. This appears to be a subject that is fraught with legal pot holes so the responses were considered and guarded. The underlying sentiment appeared to be that the user may wear the helmet as he or she decides and at what level of risk the user decides to accept. Few manufacturers or product distributors would go past the recommendation stage although in some cases the helmet manual was far more specific.

The OEMs that indicated that the chin bar/front section/face guard always be worn in the down and locked position included:

AFX: It is meant to be worn with the chin bar down.
BRG Sports (Bell Helmets): The proper way to wear the helmet is closed (chin bar down) when the bike is in motion.
Fulmer Helmets: Satisfies certification criteria if chin bar is worn in the down position. It is not recommended to be worn in the up position while the motorcycle is in motion.
HJC America: Recommends that the helmet not be worn with the chin bar in the up position.
ICON: Only makes Full Face Helmets because of the statistical impact area percentages.
Joe Rocket: Does not offer a modular helmet.
Kabuto: It is very dangerous to ride with the chin cover opened.
Lazer: The modular helmet is certified as a full face and in some cases also as a three quarter (homologated). This is the only response that addresses the lever aspect of the chin bar in the up position.

LS2: Either Full Face or Open Face is recommended. The represented added a personal recommendation that the chin bar be closed when the motorcycle is in motion. No official company position as proffered.
Nolan: Representative agreed with safety reasoning but stated the company could not enforce wearing the chin bar in the down position so does not express a policy. The manual associated with the N-103 I had does state that the chin bar should be closed and fastened when operating the motorcycle.
Schuberth: As for modular helmets; unless the helmet is dual certified, meaning it has been tested and certified with the chin bar up, it should not be worn with the chin bar up while the bike is moving
Scorpion: We recommend riding with the front portion in the closed position when the modular portion is attached.
Shark: EVO3 is designed to be used as a Full Face or a Three Quarter helmet if the chin bar is locked backed.
Shoei: Shoei's position on this is actually stated as a warning in the owner's manual that comes with the helmet. Basically it says that the helmet should not be worn with the face cover up while riding. Shoei manual states "Do not ride your motorcycle with the face cover open."
Speed and Strength: No recommendation - rider's discretion via e-mail. Telecon contact stated: He indicated that S and S recommendation is the front portion of the modular helmet should be in the down and locked position while in motion.
Vega: We strongly advise that the jaw be down and locked in the closed position when riding in order to provide the best level of protection in the event of an impact
SMF: We have been encouraging the industry to develop this sort of helmet for Snell M programs for quite some time. For a while, there were a Snell certified few modular helmet configurations in our M2005 and M2010 programs but, so far, no one has developed a complete range of sizes and the few successful efforts are all out of production.

OEMs not responding:

AGV
GMax/WPS-Inc. - GMax US Distributor
Suomy
Torc

Although many of the OEMs will state that their product be worn in the intended configuration, few to none will state it in writing as a requirement. The bottom line is that how the helmet is worn is up to the rider. They will only recommend specific usage guidelines.

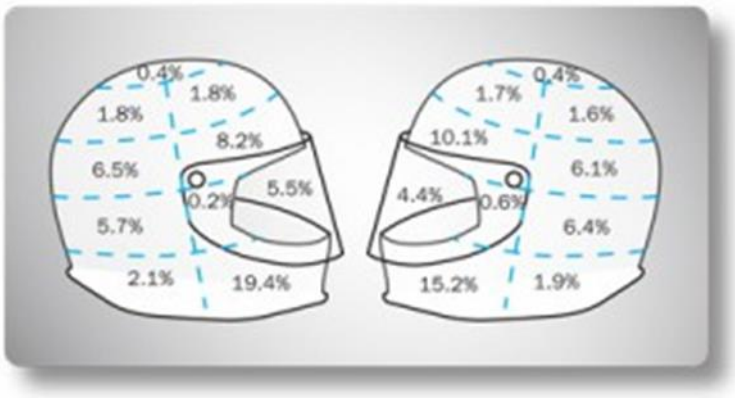
This concept is an interesting one. If a helmet is designed to be worn in a specific way or manner it would seem that the OEM would want to stipulate that is the only way it should be worn so they are not liable if a component fails. That said, the lack of testing appears to be the largest factor in the lack of guidance. The modular helmet is certainly under-represented in test data. Since it hasn't been thoroughly tested, the prescribed manner of

wear probably cannot legally be stipulated. The Economic Commission of Europe (ECE) Standard – Regulation Number 22-05 is interesting in that the modular helmet may be certified as either a full face helmet or if the chin bar is worn up a three quarter face helmet. This is referred to as "Dual Homologation" or it is sanctioned or allowed in either context or configuration. ECE 22-05 is not legally binding in the United States where FMVSS 218 is the prevailing rule. It is also interesting to note by several OEMs that if the chain bar is worn up the user is in violation of the standard.

It appears that the only way to approach this issue is from the standpoint of increased risk. The modular helmet was not designed nor intended to be worn with the chin bar in the open position for several reasons:

- It presents a large sail area that could result increased air resistance and fatigue to the neck.
- It is not as safe as it could be if the chin bar was locked down into the pseudo full face configuration.
- Not all hinges or locks provide the same level of security
- Not all chin bars can be secured in the up position allowing them to obstruct a rider's view by partially closing during an emergency stop.
- The chin bar could present a twisting moment to the neck if it caught on the ground in the event of a crash and contact with the road surface.
- Numerous other issues and reasons.

We need to emphasize to the wearer that they are assuming an increased risk level with the chin bar raised. Many riders/co-riders say when it is cold they prefer the chin bar down; however when the temperature warms they raise the chin bar to increase air flow. This is counter to the safety claims of the helmet and is more oriented to personal convenience than the reduction of risk. I would suggest that two helmets may be safer, albeit more expensive, than a single modular; one full face and one three quarter. One recommendation would be to include the statistical impact location percentage picture from either the SMF website testing criteria, DOT standard, the ICON statistics, Hurt Report, or the LS2 response as a visual reminder of risk.



The Impact Location graphic from the Hurt Report (extrapolated from collected data) and the Deitmar Otte Proceedings Study is depicted above. The LS2 graphic is below:

Based on the work of Dietmar Ott.
www. ls2helmets.us
18.3%
9.9%
There is a 62.8% chance you will HIT YOUR FACE in a motorcycle accident
34.6%
LS2 HELMETS

It is easy to see where the majority of the impacts occur. Many of the articles state that testing is not as efficient or accomplished as completely as one would believe. The majority of motorcycle crashes result in an angular or glancing blow to the helmet (head) and create a different type of injury than the test evaluate.

Resultant recommendations of this investigation are:

- Expand the risk awareness verbiage when discussing helmet types to include the frontal impact risk. This risk is associated will all helmet types however the degree of injury possible is far less severe if the rider/co-rider wears a Full Face helmet or Modular helmet with the chin bar always in the down position as compared to a Three Quarter or Half type helmet. The estimation and assessment of risk is always a personal issue, however an accurate assessment of the risk is a goal of the course.
- Include a slide showing depiction of the Otte Impact Location percentage graphic in the helmet section. This should not be dwelt upon but shown and used to generate discussion then the class should move along.
- Minimal adjustment to curriculum materials would include acknowledgement that when wearing a Modular Helmet with the chin bar in the up position:
    - Risk is elevated
    - Possibility of facial injury is higher in a crash
    - Wind Drag is a factor possibly yielding a higher degree of neck fatigue
    - This was not how the Modular helmet was intended to be worn.

Robert G. Lake

Attachment 1 – Sample Query Letter

Robert G. Lake

2129 Bear Creek Rd.
Papillion, NE 68133
E-mail: Robert.lake47@cox.net
Phone: 402-597-1033

AFX North America Inc.
P.O. Box 5045 Cerritos
CA, USA 90703

To Whom It May Concern,

I am writing on behalf of the Gold Wing Road Riders Association (GWRRA) Rider Education Program (REP). The GWRRA motto is Friends for Fun, Safety and Knowledge. We are a not-for–profit association that stresses riding safely and competently. GWRRA maintains a World Class Rider Education Program to help our membership achieve this goal. The foundational basics of our Rider Education training include:

- Rider Training Courses consisting of a classroom knowledge component and also an on–motorcycle skills practice component.
- Seminars discussing the many aspects the rider and co-rider encounter when riding a motorcycle.

Our emphasis on safe riding includes the phrase: "All-The-Gear, All-The-Time" or "ATGATT". Proper riding gear is addressed in our Rider Courses and also our seminars. The "helmet" is, of course, stressed as the most important piece of safety equipment the rider and co-rider can wear. This brings me to my request for information from your company regarding the "Modular" (Flip-Up, Flip-Front are other names) style of motorcycle helmet that has become extremely popular with our membership.
The modular helmet is designed to allow the wearer to raise the front portion of the helmet to facilitate ease of donning and doffing. It also facilitates conversation when stopped without the necessity of helmet removal. This represents a great stride in helmet comfort and usability but also allows the rider or co-rider to ride without the front portion of the helmet locked in place. Many of our members purchase the modular helmet and wear the equipment in two different ways. When the weather is colder or less hospitable they wear the helmet with the front portion closed as we believe it was designed. However, when the weather becomes hotter, many riders and co-riders will ride with the front portion in the open position for greater air flow. This configuration essentially turns the modular helmet design into a "Three Quarter" helmet design. The GWRRA Rider

Education Program addresses the wearing of proper protective gear during our training and would like to know what your company's policy is on the following:
"Should the Modular Helmet be worn with the front portion of the helmet (chin bar and visor area) down and locked while the motorcycle is moving or when riding, or may the Modular Helmet be worn with the front portion in the open position while the motorcycle is moving?"
We realize that your company can only recommend the proper wear of the product and cannot ensure it is worn in the manner intended once sold. It is up to the rider and co-rider to determine the level of risk they are willing to accept. We want to ensure that our training materials advocate the correct method of wear by reflecting the proper way to wear protective equipment and also the way the equipment was intended to be worn by the prospective user. The safety of our membership is paramount to our Rider Education Program. We would appreciate your position on this subject. Thank you for your comments.

Ride Safely,

Robert G. Lake

Master Instructor Trainer 014
Gold Wing Road Riders Association
9/15/2015

Attachment 2 - AFX Response

Hi Robert

The FX-140 is classified and tested as an open face helmet; the chin bar does not have any protective qualifications but obviously is it safer than wearing an open face or beanie style.
It is meant to be worn with the chin bar down.

Thanks

Linda

Attachment 3 - AGV Response

No response received to online inquiry.

Attachment 4 - Bell Response

From: Amy J. Couture [mailto:ajcouture@brgsports.com]
Sent: Friday, September 18, 2015 3:56 PM
To: rlake4@cox.net
Subject: RE: Modular Helmet WearAmy J. Couture <ajcouture@brgsports.com>

Robert:

Thank you for your email. I forwarded your question on to the product management team.

The proper way to wear the helmet is closed (chin bar down) when the bike is in motion.

I hope this helps.

Thanks,

Amy J. Couture
BRG Sports
1001 Innovation Road
Rantoul, IL 61866

Ph: (800) 456-2355 or Fax: (800) 888-9009

BRG | SPORTS

BELL Riddell GIRO C-PREME Blackburn

The information contained in the e-mail message is private, confidential, and may be protected from disclosure; please be aware that any other use, printing, copying, disclosure or dissemination of this communication may be subject to legal restriction or sanction. If you think that you have received this e-mail message in error, please reply to the sender.

Attachment 5 - Fulmer Response
No response received to online inquiry.

Telecon between Fulmer Helmets Inc. Customer Support (Ellis) and Robert Lake, 10/22/2015, 1340 CST

Ellis stated that the M2B modular helmet satisfies DOT and ECE testing criteria if the chin bar is worn as intended in the down and locked position. It is not recommended to be worn in the up position while the motorcycle is in motion.

Attachment 6 - GMax Response

No response to online inquiry received. Contact via telecon, WPS – Inc. (US Distributor) and Robert Lake 10/22/2015, 1345 CST

Customer service representative answered; however, did not have the information requested. Request was left with voice mail of Kyle, a technician.

Attachment 7 - HJC Response

No response received on-line. Contacted via telecon between HJC America Inc. (Customer Service Representative -Romel) and Robert Lake, 10/22/2015, 1355 CST.

HJC America, Inc.
511 S. Harbor Blvd. #V, La Habra, CA 90631
TEL. 562.407.2186
FAX. 562.802.7706

Romel stated that HJC does not recommend wearing their modular helmets with the chin bar in the up position. It is a safety issue and may damage the hinge assemblies.

Attachment 8 - ICON Response

From: Raiche, Tim [mailto:TRaiche@rideicon.com]
Sent: Friday, September 18, 2015 10:52 AM
To: 'robert.lake47@cox.net'
Subject: RE: Contact from Ride Icon Website

Robert, Thank you for your inquiry. I ran this past the actual design team and was asked to refer you to a couple of links. The first one is http://www.rideicon.com/2014/04/introducing-the-airframe-statistic/ . This kind of explains why we only make full face helmets. The other link is https://rideapart.com/articles/icon-airframe-statistic . This one explains the Statistic. I hope this information helps at least a little.

Best Regards,
Icon Motosports
Tim R
(608)758-1111 ext 5666
(608)758-1097 fax
The information contained in this transmission is intended only for the confidential use of the designated recipient named above. If the receiver of this transmission is not the intended recipient or agent responsible for delivering it to the intended recipient, you are hereby notified that you have received this document in error, and that any review, dissemination, distribution or copying of this message is strictly prohibited

Attachment 9 - Joe Rocket Response

Hi Robert;

Thank you for considering us. Regrettably we don't offer modular helmets so we can't respond.

You may want to consider contacting HJC. They may be able to assist you.

Best regards,

Danielle
Joe Rocket
208-932-0303

Please include all previous correspondence when replying.

www.joerocket.com
https://www.facebook.com/joerocketgear

Attachment 10 - Kabuto Response
Partial
-----Original Message-----
From: Scott Enlow [mailto:senlow@kabutousa.com]
Sent: Tuesday, October 06, 2015 12:25 PM
To: Robert Lake
Subject: Re: Modular Helmet Wear and Use

Hi Bob,

Thank you for your interest in Kabuto helmets and for seeking out our opinion on this subject when preparing your training materials. Before I worked for Kabuto, I worked at a shop called MR Motorcycle. On many occasions, I was asked to present helmets, jackets, etc...to the local GWRRA chapters in Asheville and Hendersonville NC to help their members expand their knowledge of safety gear. I appreciate all of the work that your members do to promote the safe and responsible enjoyment of our sport.

I have forwarded your questions to Kabuto Japan so that we can get the official word from them.

Thanks,

Scott Enlow
Kabuto USA

Final
Hi Robert,

Here is the official word from Kabuto Japan.

Thanks,

Scott Enlow
Kabuto USA

Subject: RE: Modular Helmet Wear and Use

Hi, Scott;

Below please be advised as follows.

The statement is on the IBUKI owner's manual.

Best regards

Michiyuki Yasutomi

OGK Kabuto

[cid:image001.png@01D101BE.0F5B22E0]

Kabuto
Japan

IBUKI

Instruction Manual

CAUTION!

- Please open the Chin Cover in a careful manner.
  Otherwise the attachment part and ratchet systems will break.
- Lock system adopted for firm closing.
  Please be careful not to shut the cover on your fingers or anything when you close the Chin Cover.

WARNING!

- **Do not operate the Chin Cover while riding. It is very dangerous. Operate it before riding.**
- **Chin Cover only stops at fully opened or closing position. Never use the Chin Cover opened in any manner while riding. Please make sure you rides with closed position.**
- **It is very dangerous to ride with Chin Cover opened. The wind pressure on the Chin Cover will be big and it harm your neck or leads to a serious accident.**
- **Make sure to check and tighten the Collar Screw regularly. Riding with the loosen screws is very dangerous as the shield and the Chin Cover may be removed while riding, and it may leads to the serious accident.**

Attachment 11 - LaZer Response

From: Benoit Arnould [mailto:benoit.arnould@lazerhelmets.com]
Sent: Tuesday, October 27, 2015 3:30 AM
To: rlake4@cox.net
Cc: Damien DELFABBRO
Subject: RE: Modular Motorcycle Helmet Wear and Use

Dear Robert,

Riding with the chinguard open obviously provides less protection to the face than with the chinguard closed. That a decision that the rider has to make.
However, there is an important remark to pay attention to.
Every modular helmet is first homologated as a full face helmet. There is not homologation specifically for modular helmet. It means that the helmet was tested and approved with the chinguard closed. You can see that on the homologation label on the chinstrap where there is a "P" letter. P is used for fullface helmet.
Some modular helmet are also homologated as a jet, with no chinguard. In this case, you will see "P/J" on the homologation label. It proves that the helmet is homologated as a fullface and also as a jet.

You might think that if an helmet was homologated as a full face, it will automatically be homologated as a jet, since the impact test are the same. Well, it is not necessary the case as they are other test conducted in order to be homologated. One of them is the roll off test. This test makes sure that the helmet stays on head if it is rotated forward. This test is much easier to pass with a full face.
So, if you ride with a modular helmet, chinguard open, which is not homologated as a jet, you are not sure that the helmet will stay on your head in case of an accident.
So, if you plan to ride with the chinguard open, make sure that there is a P/J marking on the label.

And finally, although it is not tested in the norm, there is one more thing to consider when you ride with the chinguard open. In case of an accident, the chinguard could act as a lever and make more damage to your neck.
We address this issue on our helmet, the Paname and the Monaco. In open position, if you push the chinguard backwards with enough strength, it will rotate backwards. That way, In case of an accident, the strength applied on the chinguard is not transferred to your neck.

Best regards,

Benoit Arnould
Product Engineer.

De : Damien DELFABBRO
Envoyé : mardi 20 octobre 2015 09:06
À : Benoit Arnould <benoit.arnould@lazerhelmets.com>
Objet : TR: Modular Motorcycle Helmet Wear and Use

Attachment 12 – LS2 Initial Response

Hi Robert,

Thank you for contacting LS2 Helmets! We just wanted to confirm that your message has been successfully delivered to appropriate department, and we will be back in touch as soon as possible.

Please see below for a copy of your message.

-LS2 Helmets

==========

Name: Robert Lake
Company: GWRRA
Email: robert.lake47@cox.net
Phone: 4025971033

Sent to: Sales & Service

Message:
To Whom It May Concern and Good Morning,
I have attempted to contact you in the past to inquire about the proper wear and any cautions you may identify concerning the wear of the modular helmet. My organization conducts rider training for both the rider and co-rider and we see many different types of helmets. Our goal is to provide the most up to date and accurate information possible so that individuals may make the most educated choice when they decide to acquire a new helmet. Company position or excerpt from the user's manual would be most helpful. Thank you and please see below.
I am writing on behalf of the Gold Wing Road Riders Association (GWRRA) Rider Education Program (REP). The GWRRA motto is Friends for Fun, Safety and Knowledge. We are a not-for–profit association that stresses riding safely and competently. GWRRA maintains a World Class Rider Education Program to help our membership achieve this goal. The foundational basics of our Rider Education training include:
• Rider Training Courses consisting of a classroom knowledge component and also an on–motorcycle skills practice component.
• Seminars discussing the many aspects the rider and co-rider encounter when riding a motorcycle.
Our emphasis on safe riding includes the phrase: "All-The-Gear, All-The-Time" or "ATGATT". Proper riding gear is addressed in our Rider Courses and also our seminars. The "helmet" is, of course, stressed as the most important piece of safety equipment the rider and co-rider can wear. This brings me to my request for information from your company regarding the "Modular" (Flip-Up, Flip-Front are other names) style of motorcycle helmet that has become extremely popular with our membership.

The modular helmet is designed to allow the wearer to raise the front portion of the helmet to facilitate ease of donning and doffing. It also facilitates conversation when stopped without the necessity of helmet removal. This represents a great stride in helmet comfort and usability but also allows the rider or co-rider to ride without the front portion of the helmet locked in place. Many of our members purchase the modular helmet and wear the equipment in two different ways. When the weather is colder or less hospitable they wear the helmet with the front portion closed as we believe it was designed. However, when the weather becomes hotter, many riders and co-riders will ride with the front portion in the open position for greater air flow. This configuration essentially turns the modular helmet design into a "Three Quarter" helmet design. The GWRRA Rider Education Program addresses the wearing of proper protective gear during our training and would like to know what your company's policy is on the following:
"Should the Modular Helmet be worn with the front portion of the helmet (chin bar and visor area) down and locked while the motorcycle is moving or when riding, or may the Modular Helmet be worn with the front portion in the open position while the motorcycle is moving?"
We realize that your company can only recommend the proper wear of the product and cannot ensure it is worn in the manner intended once sold. It is up to the rider and co-rider to determine the level of risk they are willing to accept. We want to ensure that our training materials advocate the correct method of wear by reflecting the proper way to wear protective equipment and also the way the equipment was intended to be worn by the prospective user. The safety of our membership is paramount to our Rider Education Program. We would appreciate your position on this subject. Thank you for your comments.
Ride Safely,

Robert G. Lake

Master Instructor Trainer 014
Gold Wing Road Riders Association
Robert.lake47@cox.net
(402) 597-1033

Attachment 12 – LS2 Final Response

Dear Robert,

It's a pleasure to make your acquaintance. Your questions regarding modular helmets were forwarded to me, and I'm happy to offer some information that I hope will be useful. I'm a rider (8 motorcycles in my garage, and all get ridden on a regular basis), I've been in the motorcycle industry for nearly 40 years and specializing in helmets for the past 15 or so, and I'm a believer in ATGATT.

First a little helmet use background, and then I'll get to your question specifically.

Reports vary, but there is overwhelming evidence that wearing ANY certified helmet dramatically decreases the likelihood of serious brain injury or death in the event of a motorcycle accident. In a report from Advocates for Highway Safety, they say that helmets reduce the risk of head injury by 69% and the risk of death by 42%. You can see that report here: http://saferoads.org/issues/motorcycle-helmets/. In the attached DOT report, in the last paragraph on page 37, the DOT concluded, "Helmets significantly reduced the odds of TBI in both single-and multiple-vehicle crashes. In single-vehicle crashes, helmeted motorcyclists had just fewer than 60 percent of the odds of TBI compared to un-helmeted motorcyclists. For multiple-vehicle crashes, helmeted motorcyclists had 76 percent of the odds of un-helmeted motorcyclists for sustaining TBI. **Using the logistic model we can estimate the effectiveness of motorcycle helmets at preventing TBI to be 41 percent for single-vehicle crashes and 25 percent for multiple-vehicle crashes**."

At LS2, we do believe that riders need to have choices, and therefore, we offer DOT approved helmets in virtually all styles, from full-face to modular, to open face and half shells. We also believe rider education is the best way to help riders make the right decision. **We would prefer to see a rider wear a full face helmet**, but would choose to see them wear a half helmet and protect their brain rather than no helmet at all. See the attached image titled "IMPACT". This is based upon the work of Dieter Otte and his helmet study, which can be found via Google. It shows that a rider has a nearly 63% chance of hitting their face in the event of a crash. Full face protection is a smart choice.

DOT is a great standard and is THE required standard here in the U.S. I sometimes hear riders say, "It's ONLY DOT," as though that implies it's inferior and not as good as others, but I can tell you, **DOT is a wonderful standard and has saved a lot of lives**. ECE is the standard of the Europe (it is not legally valid in the U.S.). I bring ECE up because in my opinion, it is also a wonderful standard, and they have very specific guidelines for modular style helmets. In Europe, a modular helmet can be certified as a full-face only, in which case insurance companies will not consider it a valid helmet if the chin bar is in the up position, or they can be dual-homolgated as BOTH full-face and open-face, in which case insurance companies DO consider them valid, even when used with the chin bar up. This is the only guideline I'm aware of that makes the distinction. Most modular helmets are NOT intended to be used while riding with the chin bar in the open position, and the balance can make them uncomfortable to wear in that position. We are coming out with a new modular in 2016 call the Metro. It is DOT approved, and also dual-homolgated ECE as both a full-face and open-face helmet, (only legally valid in Europe, but interesting just that same). I'm sure other manufacturers offer dual-homologated versions.

If I wanted to wear a modular in the open position, I'd buy a model that was DOT approved, AND ECE dual-homologated. I personally recommend riding only with chin and face protection, but that is a personal decision.

I've attached both the DOT and ECE certification requirements for your reference. They are pretty dry reading, but they do show the requirements for each.

Hope this is helpful. Let me know if you have any other questions, or if you need me to clarify anything.

Sincerely,
Phil

Phil Ammendolia
Vice President of Sales and Marketing

2255 White Oak Circle
Aurora, IL 60502
Cell: 916.835.5445
Office: 630.236.2366
Fax: 630.236.2367
www.LS2helmets.us

Based on the work
of Dietmar Ott.
www. ls2helmets.us
LS2
18.3%
9.9%
There is a 62.8%
chance you will
HIT YOUR FACE
in a motorcycle
accident
34.6%
LS2
HELMETS

Attachment 13 - Nolan Initial Response

Suzanne,

Thank you for your prompt response. Anytime during the day would be great. I am retired so home most of the time. If not we have voice mail. My home phone is 402-597-1033 and my cell is 402-253-6152. My wife and I have worn Nolan helmets in the past. We had the N103. We are both currently wearing the Shoei Neotec. Again, thanks. I will be looking forward to your call.

Bob

Robert G. and Charlotte M. Lake
GWRRA 211051/211051-01
MIT-014
NE-O Assistant Chapter Directors
NE-O and NE District COY
robert.lake47@cox.net
rlake4@cox.net
402.597.1033 / 402.253.6152 (cell)

States and Provinces we've ridden in.

-----Original Message-----
From: Suzanne Knaff [mailto:sk@cimaint.com]
Sent: Monday, October 19, 2015 11:32 AM
To: Robert.lake47@cox.net
Subject: Re: Modular Motorcycle Helmet Wear and Use

Dear Robert
First, thank you for contacting us. Nolan has been manufacturing helmets since 1972. Helmets are the only product they make, so it's easy to see why rider comfort and safety is first and foremost in their minds. That said, we share your belief in quality gear. If possible I would like to discuss this over the phone. I'm traveling home from an event and will not be back in the office until Thursday of this week. Is there a good time I could call you after that?

Suzanne Knaff
Cima international

Nolan Telecon between Suzanne Knaff and Robert Lake, 10/22/2015, 1155CST

I spoke with Ms. Knaff and explained the reason for our request for information. She agreed with everything I said concerning the proper wearing of the modular helmet but said that since the company could not enforce the wearing of the helmet with the chin guard in the down and locked position they could not take a position on how to wear the helmet. She said that it was DOT and ECE compliant in both the full face and three quarter face configuration. This is a self-certification by the company as we know. The comments she made do not match the statement in the helmet manual for the N-103 (a helmet I had previously). See the highlighted section in Attachment 14.

Attachment 14 – Excerpt from Nolan N103 Helmet Manual

Fig. 14

Fig. 15

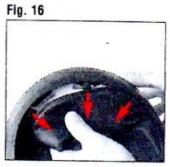


Fig. 16

Fig. 17

cod. ISTR000000051

NOLAN N103

SICUREZZA E ISTRUZIONI D'USO
SAFETY AND INSTRUCTIONS FOR USE
SICHERHEIT UND GEBRAUCHSANLEITUNG
SÉCURITÉ ET INSTRUCTIONS D'UTILISATION
SEGURIDAD E INSTRUCCIONES
SEGURANÇA E INSTRUÇÕES DE USO
VEILIGHEID EN GEBRUIKSAANWIJZING
TURVALLISUUS JA KÄYTTÖOHJEET
BRUKS-OG SIKKERHETSANVISNING
SÄKERHET OCH BRUKSANVISNING
SIKKERHED OG ANVENDELSE
ΑΣΦΑΛΕΙΑ ΚΑΙ ΟΔΗΓΙΕΣ ΧΡΗΣΗΣ

INSTRUCTIONS FOR USE

CHIN GUARD OPENING SYSTEM

This helmet is equipped with the innovative DUAL ACTION chin guard opening system which prevents it from opening accidentally.

N.B.: It is not necessary to open the chin guard to put the helmet on.

1 OPENING

1.1 Push the red safety lever outwards by turning it with your thumb (Fig. 1).
1.2 Place your forefinger on top of the opening lever and push it downwards so as to unlock the chin guard (Fig. 2).
1.3 Pull the flip-up chin guard forwards, accompanying it upwards as it rotates (Fig. 3).

2 CLOSING

2.1 Pull the chin guard downwards, accompanying it as it rotates, until you hear the clicks of the closing mechanism.
2.2 Make sure that the chin guard is properly fastened.

WARNING!!!

- **Do not ride the motorcycle with the chin guard open. The chin guard MUST be closed and fastened while riding the motorcycle.**
- **Do not use the helmet without the chin guard.**
- **Do not use the helmet in case of chin guard malfunctioning. Immediately contact a Nolan authorized dealer.**
- **Do not remove nor tamper the fixing screws that connect the chin guard to the shell.**

• VISOR MECHANISM SYSTEM

1 DISASSEMBLY

1.1 Open the visor completely.
1.2 By pressing the visor release button (A), slide the visor forwards until you hear a click (Fig. 4).
1.3 Release the visor fastenings (B1 and B2) from their seat (Fig. 5).
1.4 Repeat the same steps on the other side of the helmet.

Warning: do not remove the visor opening/closing mechanisms from the shell.

2 ASSEMBLY

2.1 Turn the visor automatic recovery gear (C) completely forwards as shown in Fig. 6.
2.2 Set the visor in open position by placing the visor fastenings (B1 and B2) into their seats in the visor mechanism (Fig. 5).
2.3 Insert fastening B1 in the appropriate seat and press the visor against the shell in line with fastening B2 (Fig. 4), making sure that the timing tooth of the visor automatic recovery gear (C) is correctly inserted into the timing slot of the visor (D) as shown in Fig. 6.
2.4 Slide the visor backwards until the visor locks into place.
2.5 Repeat the same steps on the other side of the helmet.

WARNING!

- **In order to provide a correct operation the timing tooth, (C) has to be correctly inserted into the relevant visor slot (D).**
- **Make sure that the system is working properly. Open the visor. By lifting the chin guard, the visor closes automatically.**
- **Do not use the helmet if the visor has not been assembled properly.**
- **If the visor opening/closing mechanisms are not working properly or if such mechanisms get damaged, please contact a Nolan authorized dealer.**

• NFRS - NOLAN FOG RESISTANT SYSTEM

1 INNER VISOR ASSEMBLY

1.1 Remove the visor.
1.2 Make sure that the inner surface of the visor is clean and check that the pin adjustment external levers are turned inwards.
1.3 Remove the protective film from the inner visor on the side in contact with the visor.
1.4 Place one side of the inner visor on one of the visor pins and hold it in position (see Fig. 7).
1.5 Widen the visor and fasten the other side of the inner visor to the second pin (Fig. 8).
1.6 Release the visor.
1.7 Remove the second protective film from the inner visor and check that the entire inner visor profile adheres to the visor.
1.8 Assemble the visor onto the helmet.

CHECKING AND ADJUSTING THE INNER VISOR AIR DRAUGHT

Check the correct system assembly by opening and closing the visor. Check that both visors are correctly fastened and do not move.
If the inner visor is not tightly fixed to the visor, move the external adjustment levers simultaneously upwards to increase the air draught (Fig. 9). This operation must be carried out gradually. The maximum air draught is achieved when the external pin adjustment levers are turned outwards.

WARNING!!!

The presence of dust between the two visors can produce scratches on both surfaces. Scratched visors and inner visors may cause reduced visibility and must therefore be changed.
Regularly check the correct air draught of the inner visor to prevent the same from moving and scratching both surfaces.
If the helmet visor fogs up and/or condensation forms between the visors, check both for system correct assembly and air draught.

12 13

Attachment 15 - Schuberth Response

Hello Robert,

Thank you for your inquiry. As for modular helmets; unless the helmet is dual certified, meaning it has been tested and certified with the chin bar up, it should not be worn with the chin bar up while the bike is moving. I believe there is one modular helmet in the market with this certification (Shark?). All other modular helmets, unless dual certified, technically should not be worn with the chin bar up as it will not offer the level of protection needed. Let me know if you have any other questions. I hope this information helps.

Brian Lee
Technical Service Manager

Schuberth North America
Held USA
27111 Aliso Creek Road #175
Aliso Viejo, CA 92656
T: 949.215.0893 | **F:** 949.215.0469

……
……..

Attachment 16 - Scorpion Response

Hi Robert,

Thank you for contacting Scorpion USA. In regards to your question:

"Should the Modular Helmet be worn with the front portion of the helmet (chin bar and visor area) down and locked while the motorcycle is moving or when riding, or may the Modular Helmet be worn with the front portion in the open position while the motorcycle is moving?"

We recommend riding with the front portion in the closed position when the modular portion is attached. If ridden with it open, it would create a buffeting effect which would obstruct the attention of the rider. There is always the option to take off the modular portion of the helmet to turn it into a ¾ helmet that would have a more open feeling.

Thank you,

WE LIVE IN OUR PROTECTION

Georgina Quezada | **Scorpion Sports Inc.** | Customer Satisfaction Specialist
10425 Slusher Drive, Santa Fe Springs, CA 90670 | **http://www.scorpionusa.com**
t: 888.672.6774 | **d:** 562.320.6400x6500 | **e:** georgina@scorpionusa.com

This message contains information which may be confidential and privileged. Unless you are the intended recipient (or authorized to receive this message for the intended recipient), you may not use, copy, disseminate or disclose to anyone the message or any information contained in the message. If you have received the message in error, please advise the sender by reply e-mail, and delete the message. Thank you very much.

Attachment 17 – Shark Group Response

hello sir

well, long story short, in the modular helmet world, there is 2 different categories

-the **conventional flip-ups**, which represent all the non-shark brands, with a product that flips the chin bar and shield up together and stop on the forehead, generating a big catch for the wind and an unbalanced helmet…not to mention an illegal to ride with helmet in the open position, because all DOT modular are certified as full face, not as open face, so if something happened while riding with the helmet up, legally speaking, you're out-law…because you are using the product in a configuration that is not appropriated for riding, not to mention that a L.E. officer a bit aware of this legal aspect, could give you trouble…

-the **shark convertible helmet, EVO3**, this helmet is the first helmet design to be used as full face and open face, with the chin bar that switch to the back to turn into a spoiler, so you can keep the right balance and still use the shield in the open face position, we have a world patent on it and this helmet is certified DOT and ECE2205 which is the UN standard, the MOTOGP, WORLDSBK, AMA, FIM…approved standard, the ECE has 2 certifications, one for full face and the other for open face and the EVO3, is the first helmet in the world certified for both…

there is also an independent testing made by the BRITISH DEPT. OF TRANSPORT, called S.H.A.R.P. where all helmets available on the market have been purchased and crash tested to mesure the energy absorption, rated with 1 to 5 stars, the EVO3 is the only one modular reaching 5 stars…

hope these few elements are helping you better understand the situation.

best regards

shark

Début du message réexpédié :

De: contact@shark-helmets.com
Objet: Shark page contact :
Date: 19 octobre 2015 11:42:41 UTC−4
À: contactUS@shark-helmets.com

Nom du contact : Lake E-mail du contact : robert.lake47@cox.net Commentaire du contact : To Whom It May Concern and Good Morning, I have attempted to contact you in the past to inquire about the proper wear and any cautions you may identify concerning the wear of the modular helmet. My organization conducts rider training for both the rider and co-rider and we see many different types of helmets. Our goal is to provide the

most up to date and accurate information possible so that individuals may make the most educated choice when they decide to acquire a new helmet. Company position or excerpt from the user?s manual would be most helpful. Thank you and please see below. I am writing on behalf of the Gold Wing Road Riders Association (GWRRA) Rider Education Program (REP). The GWRRA motto is Friends for Fun, Safety and Knowledge. We are a not-for?profit association that stresses riding safely and competently. GWRRA maintains a World Class Rider Education Program to help our membership achieve this goal. The foundational basics of our Rider Education training include: ? Rider Training Courses consisting of a classroom knowledge component and also an on?motorcycle skills practice component. ? Seminars discussing the many aspects the rider and co-rider encounter when riding a motorcycle. Our emphasis on safe riding includes the phrase: ?All-The-Gear, All-The-Time? or ?ATGATT?. Proper riding gear is addressed in our Rider Courses and also our seminars. The ?helmet? is, of course, stressed as the most important piece of safety equipment the rider and co-rider can wear. This brings me to my request for information from your company regarding the ?Modular? (Flip-Up, Flip-Front are other names) style of motorcycle helmet that has become extremely popular with our membership. The modular helmet is designed to allow the wearer to raise the front portion of the helmet to facilitate ease of donning and doffing. It also facilitates conversation when stopped without the necessity of helmet removal. This represents a great stride in helmet comfort and usability but also allows the rider or co-rider to ride without the front portion of the helmet locked in place. Many of our members purchase the modular helmet and wear the equipment in two different ways. When the weather is colder or less hospitable they wear the helmet with the front portion closed as we believe it was designed. However, when the weather becomes hotter, many riders and co-riders will ride with the front portion in the open position for greater air flow. This configuration essentially turns the modular helmet design into a ?Three Quarter? helmet design. The GWRRA Rider Education Program addresses the wearing of proper protective gear during our training and would like to know what your c ompany?s policy is on the following: ?Should the Modular Helmet be worn with the front portion of the helmet (chin bar and visor area) down and locked while the motorcycle is moving or when riding, or may the Modular Helmet be worn with the front portion in the open position while the motorcycle is moving?? We realize that your company can only recommend the proper wear of the product and cannot ensure it is worn in the manner intended once sold. It is up to the rider and co-rider to determine the level of risk they are willing to accept. We want to ensure that our training materials advocate the correct method of wear by reflecting the proper way to wear protective equipment and also the way the equipment was intended to be worn by the prospective user. The safety of our membership is paramount to our Rider Education Program. We would appreciate your position on this subject. Thank you for your comments. Ride Safely, Robert G. Lake Master Instructor Trainer 014 Gold Wing Road Riders Association
Robert.lake47@cox.net (402) 597-1033

Attachment 18 - Shoei Response

From: customerservice@shoei.com [mailto:customerservice@shoei.com]
Sent: Wednesday, September 16, 2015 11:49 AM
To: Robert Lake
Subject: RE: Modular Helmet Wear

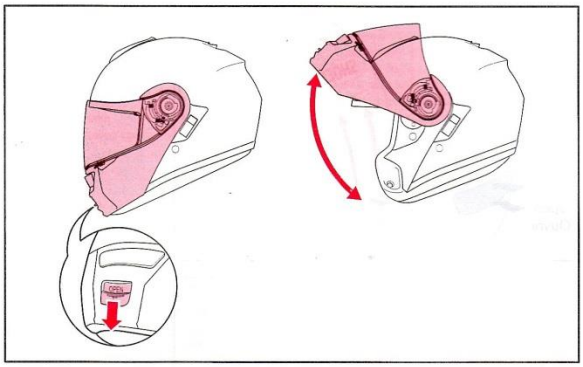
Bob,
Great question! Shoei's position on this is actually stated as a warning in the owners manual that comes with the helmet. Basically it says that the helmet should not be worn with the face cover up while riding. To explain a bit further helmets are round for a reason and that is so they will slide when being dragged across the ground. If a modular helmet is used in the up position besides the obvious buffeting and turbulence that will occur and cause fatigue; in the event of an accident you now have the face cover sticking up which may snag on the ground instead of sliding causing serious injury to the wearer.

Don Bailey
Technical Advisor
Shoei Safety Helmet Corp.
www.Shoei-Helmets.com
(714)730-0941

Attachment 19 – Excerpt from Shoei NEOTEC Helmet Manual

English

Opening and Closing the Face Cover



The face cover can be opened and closed with a single touch. To open the face cover, pull down on the knob in the bottom center of the face cover and release the lock. Rotate the face cover upward until you hear a click when the stopper engages. To close the face cover, gently rotate it downward until you hear a click when the face cover lock engages.

WARNING

- **Do not ride your motorcycle with the face cover open!**
- Do not hold the button while closing the face cover. This can cause the face cover lock to fail to engage. A face cover that is not locked may open unexpectedly during riding and lead to an accident. After closing the face cover, be sure to check that it is locked.
- Do not carry or hold the helmet by the face cover. The face cover may open, causing the helmet to drop and become damaged.
- Do not open or close the face cover by grasping the chin curtain. The chin curtain may come off.

Français

Ouverture et Fermeture de la mâchoire

La mâchoire peut être ouverte et fermée d'un simple geste. Pour ouvrir la mâchoire, abaissez le bouton situé à l'embase de celle-ci (bouton central), afin de la déverrouiller. Soulevez la mâchoire jusqu'à entendre un « clic », signe du blocage en position haute. Pour fermer la mâchoire, abaissez la doucement jusqu'au « clic », signe de verrouillage en position fermée.

ATTENTION

- **Ne roulez jamais avec la mâchoire ouverte !**
- Ne pressez pas le bouton de mâchoire lors de sa fermeture. Ceci pourrait empêcher le bon verrouillage des ergots de mâchoire. Une mâchoire qui n'est pas correctement verrouillée peut s'ouvrir inopinément et peut provoquer un accident. Après avoir fermé la mâchoire, vérifiez toujours son verrouillage.
- Ne transportez pas le casque en le tenant par la mâchoire. La mâchoire pourrait s'ouvrir et provoquer la chute et l'endommagement du casque.
- Ne manipulez pas la mâchoire en l'attrapant par la mentonnière, qui pourrait se détacher.

6

English

Chin Curtain

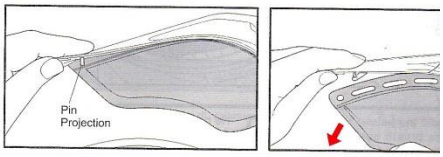
The chin curtain reduces the influx of air turbulence and wind noise into the helmet's chin area.
The chin curtain can be removed by using the following procedure.

Removing the Chin Curtain

The chin curtain is pressed against the plate at the bottom edge of the face cover and fastened by 2 pins. Refer to the drawing. Lift up the face cover plate near its right and left pins, and remove the pins that pass through the chin curtain plate. Pull out the chin curtain. Remove the chin curtain on both the right and left sides.

Installing the Chin Curtain

As shown in the drawing, lift up the face cover plate (at the bottom edge of the face cover) and insert the chin curtain plate in the space created. There are pins on the interior side of the face cover plate. Insert them through the holes of the chin curtain plate. Attach the chin curtain on both the right and left sides.



WARNING

- With the chin curtain is installed, the sound from nearby vehicles will be reduced. Please be aware of this while riding.
- Do not pull the chin curtain with the pins in place. If you do, the chin curtain or face cover plate may become damaged.
- Do not carry or hold the helmet by the chin curtain. The chin curtain may come off, and the helmet may drop.

Français

Mentonnière

La mentonnière réd
turbulences au niveau d
La mentonnière peut
procédure suivante.

Extraction de la me

La mentonnière est fix
en bas de la mâchoire
attaches, comme mon
bordure sur les cotés ga
l'attache. Retirez ensuit
sur les cotés droit et gau

Installation de la m

Comme montré sur le cr
du bas de mâchoire,
mentonnière dans l'es
ensuite les attaches laté
les espaces de cette bor

ATTENTION

- Lorsque la mentonni
des véhicules environn
prendre ceci en consid
du casque.
- Ne tirez jamais sur la
au préalable dégagé l
ceci pourrait endomm
mâchoire.
- Ne pas transporter o
mentonnière. Cette de
et le casque pourrait ch

Attachment 20 - Speed and Strength Response

-----Original Message-----
From: Jason [mailto:jason@parkersynergies.com]
Sent: Monday, October 19, 2015 1:22 PM
To: robert.lake47@cox.net
Subject: Re: Contact Form Submission From robert.lake47@cox.net

Hi Robert,

Thanks for reaching out to us at Speed and Strength, my name is Jason.

We've seen some riders ride with the chin bar up. I can't imagine it being very comfortable at high speeds.

The chin bar does snap into place when fully open but there is a chance that it would come down if you made a quick stop...it snaps into place but doesn't securely lock into place.

It wouldn't compromise the safety of the helmet but We do feel that it would be at the rider's discretion.

Regards,

Jason

Follow-on Response from Speed and Strength – Telecon with Adam Fox, Ontario, Canada
10212015 1430CST

Adam called me about my enquiry and we discussed the focus. He indicated that Sand S recommendation is that the front portion of the modular helmet should be in the down and locked position while in motion.

Attachment 21 - Suomy Response

Thank you for contacting us. We will get back to you as soon as possible.

SUOMY MOTOSPORT s.r.l.
Via Sant'Andrea, 20 A
22040 Lurago d'Erba (CO) Italia
T +39 031 696300 I **F** +39 031 696065
info@suomy.com I www.suomy.com

No further contact received.

Attachment 22 - Torc Response

No response received to online query. No telephone contact listed.

Attachment 23 - Vega Response:

From: Jim Topper [mailto:jtopper@vegahelmet.com]
Sent: Wednesday, September 16, 2015 4:29 PM
To: rlake4@cox.net
Subject: Modular Helmet Usage

Dear Mr. Lake:

Thank you for contacting us with your question regarding the proper usage of a modular helmet. I can only speak to our Vega and Stealth brand modular helmets, specifically, and I cannot speak for other brands.

We strongly advise that the jaw be down and locked in the closed position when riding in order to provide the best level of protection in the event of an impact. Our newest modular helmet, the Stealth Vertice, even has a warning label to this effect (see attached picture).

This helmet was very popular the weekend before last when we were helping out one of our dealers at Wingding!

Please let me know if you have additional questions or whenever I may be of any assistance.

Jim Topper
National Sales Manager / Marketing Director
Vega & Stealth Helmets
jtopper@vegahelmet.com
1-800-728-4898
Mobile: 253-709-2413
www.VegaHelmet.com
https://twitter.com/VegaHelmetUSA
https://www.facebook.com/VegaHelmetUSA
http://www.youtube.com/user/TheVegaHelmet

Attachment 24 - Snell Memorial Foundation Response

Dear Mr. Lake,

Thank you for your query about modular motorcycle helmets. We have been encouraging the industry to develop this sort of helmet for Snell M programs for quite some time. For a while, there were a Snell certified few modular helmet configurations in our M2005 and M2010 programs but, so far, no one has developed a complete range of sizes and the few successful efforts are all out of production. Too bad. We like the convenience of modular helmets but we will not give up any protective capability to get it.

My advice has been that if only a modular helmet will do, riders should seek out a good, DOT compliant, modular from a reputable company; Shoei, HJC and Schuberth come to mind. Although we do not test modular helmets from these companies regularly and therefore cannot claim to know much about them, we know the companies themselves for their integrity and technical competence. Although I am certain that Snell certification identifies a premium of protective capability beyond that demanded by DOT, a good DOT helmet is still far better than riding bareheaded and, to my mind, is quite likely to be better protection than many helmets homologated to Europe's EC 22-05.

Thanks for your interest.

Ed Becker

-----Original Message-----
From: Snell Memorial Foundation [mailto:info@smf.org]
Sent: Monday, October 19, 2015 12:55 PM
To: Ed Becker
Subject: FW: Modular Motorcycle Helmet Wear, Use and Certification

From: Robert Lake [mailto:rlake4@cox.net]
Sent: Monday, October 19, 2015 12:35 PM
To: info@smf.org
Subject: Modular Motorcycle Helmet Wear, Use and Certification

Dear Sirs,

I am writing on behalf of the Gold Wing Road Riders Association (GWRRA) Rider Education Program (REP). I would like to know if any Modular Style of Motorcycle Helmet has received Snell Memorial Foundation (SMF) approval.

I have contacted numerous Original Equipment Manufacturers (OEMs) producing the modular style of motorcycle helmet to determine their position on whether it is safe to ride wearing a modular style helmet with the face portion in the up position. The letter below is the request for information I forwarded to the OEMs. The goal of the GWRRA REP is not to determine which helmet a rider or co-rider should wear but to point out the risk associated with wearing a particular type of helmet. I have been a Motorcycle Safety Foundation (MSF) RiderCoach for the last 15 years and am also a GWRRA Master Instructor Trainer. The understanding and acceptance of risk by the user is central to the concept of riding safely and the motorcycle helmet is the most important piece of personal protective equipment a rider or co-rider can wear. The Snell Memorial Foundation has been and continues to be the most important independent helmet testing and certifying body.

We, in the GWRRA REP, strive to ensure our riding course instructional materials are accurate and complete. This is the genesis of the request to know if any modular helmet has received SMF certification. Thank you for your help.

Bob

Robert G. Lake

GWRRA Master Instructor Trainer (MIT) 014

Robert.lake47@cox.net <mailto:Robert.lake47@cox.net>

402-597-1033

**********OEM Request For Information (RFI)**********

To Whom It May Concern,

I am writing on behalf of the Gold Wing Road Riders Association (GWRRA) Rider Education Program (REP). The GWRRA motto is Friends for Fun, Safety and Knowledge. We are a not-for-profit association that stresses riding safely and competently. GWRRA maintains a World Class Rider Education Program to help our membership achieve this goal. The foundational basics of our Rider Education training include:

* Rider Training Courses consisting of a classroom knowledge component and also an on-motorcycle skills practice component.

* Seminars discussing the many aspects the rider and co-rider encounter when riding a motorcycle.

Our emphasis on safe riding includes the phrase: "All-The-Gear, All-The-Time" or "ATGATT". Proper riding gear is addressed in our Rider Courses and also our seminars. The "helmet" is, of course, stressed as the most important piece of safety equipment the rider and co-rider can wear.
This brings me to my request for information from your company regarding the "Modular" (Flip-Up, Flip-Front are other names) style of motorcycle helmet that has become extremely popular with our membership.

The modular helmet is designed to allow the wearer to raise the front portion of the helmet to facilitate ease of donning and doffing. It also facilitates conversation when stopped without the necessity of helmet removal. This represents a great stride in helmet comfort and usability but also allows the rider or co-rider to ride without the front portion of the helmet locked in place. Many of our members purchase the modular helmet and wear the equipment in two different ways. When the weather is colder or less hospitable they wear the helmet with the front portion closed as we believe it was designed. However, when the weather becomes hotter, many riders and co-riders will ride with the front portion in the open position for greater air flow. This configuration essentially turns the modular helmet design into a "Three Quarter" helmet design. The GWRRA Rider Education Program addresses the wearing of proper protective gear during our training and would like to know what your company's policy is on the following:

"Should the Modular Helmet be worn with the front portion of the helmet (chin bar and visor area) down and locked while the motorcycle is moving or when riding, or may the Modular Helmet be worn with the front portion in the open position while the motorcycle is moving?"

We realize that your company can only recommend the proper wear of the product and cannot ensure it is worn in the manner intended once sold. It is up to the rider and co-rider to determine the level of risk they are willing to accept. We want to ensure that our

training materials advocate the correct method of wear by reflecting the proper way to wear protective equipment and also the way the equipment was intended to be worn by the prospective user. The safety of our membership is paramount to our Rider Education Program. We would appreciate your position on this subject.
Thank you for your comments.

Ride Safely,

Robert G. Lake

Master Instructor Trainer 014

Gold Wing Road Riders Association

Bob

Robert G. Lake

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Papillion, NE 68133

rlake4@cox.net <mailto:rlake4@cox.net>

(402) 597-1033

Attachment 25: Safety in Numbers: Dietmar Otte's Motorcycle Helmet Impact Diagram
by Mark Taylor

Safety in Numbers: Dietmar Otte's Motorcycle Helmet Impact Diagram
by Mark Taylor

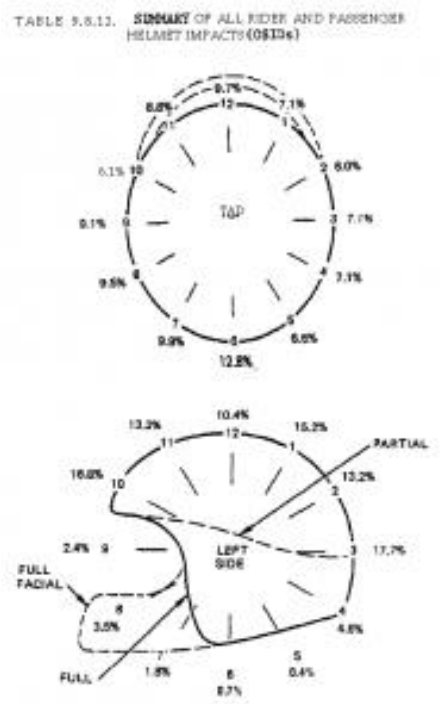

Figure 1 Hurt Report p.278 (1981)

Published in January of 1981, the *Motorcycle Accident Cause Factors and Identification of Countermeasures Volume 1: Technical Report*, also known as the "Hurt" report after the lead author H.H. Hurt, became an important document for organizations and businesses associated with motorcycle safety. The report's purpose was the collection of in-depth information and data about real cases of motorcycle crashes and the generation of information regarding "the *causes* of motorcycle accidents and injuries…the *effectiveness* of safety helmets, and other protective equipment…[and] *countermeasures* [that] must be determined which will prevent motorcycle accidents and reduce injuries" (Hurt, Ouellet, and Thom 1). Over 400 pages long, the report contains an exhaustive list of both charts and data tables but only a few visual data representations. The report's length, technical language, and lack of visual graphics leave a large section of the average population outside its scope of audience. Those audience outsiders wishing to be enlightened from such a study must either devote a large amount of their time towards understanding the study's specific language and use of numbers or seek out experts who can summarize the study's findings.

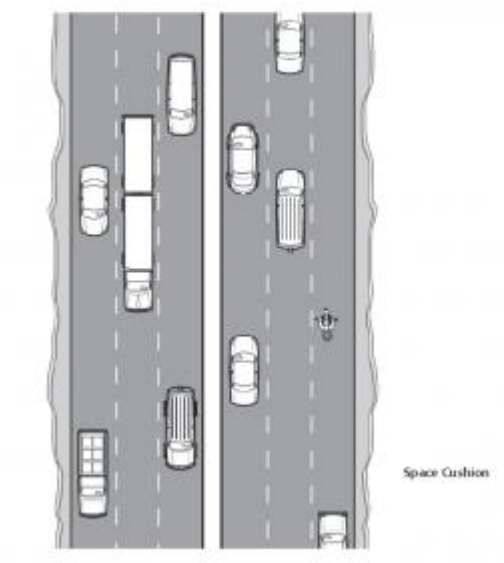

Figure 2 Basic Rider Course p. 20 (2014)

More recent studies have begun to include more visual data representations, but the language is often still outside the scope of a wider audience. The recent push toward providing free and easily accessible information through the World Wide Web has encouraged multiple organizations and private citizens to fill the information gap between experts and the information curious. In the online world of motorcycle information, sites such as *webBikeWorld* turn the highly technical information presented these reports into brief summaries of the key findings. Even still, the information presented lacks the sense of immediacy offered by well-designed data representations. According to Ingo Gunther, well-designed visuals allow "the uninitiated audience to cross into the field of expertise" (qtd. in Perer 173). Lines of text summarizing a report, despite being highly informative, are not very engaging. In response, many organizations like the Motorcycle Safety Foundation (MSF) have created images and diagrams instructing both amateur and expert riders, but one image created by a German safety researcher in Hannover concerning helmet safety has become so popular as to be posted on the Centers for Disease Control and Prevention's website (CDC) and even used in a marketing scheme by a contemporary helmet manufacturer.

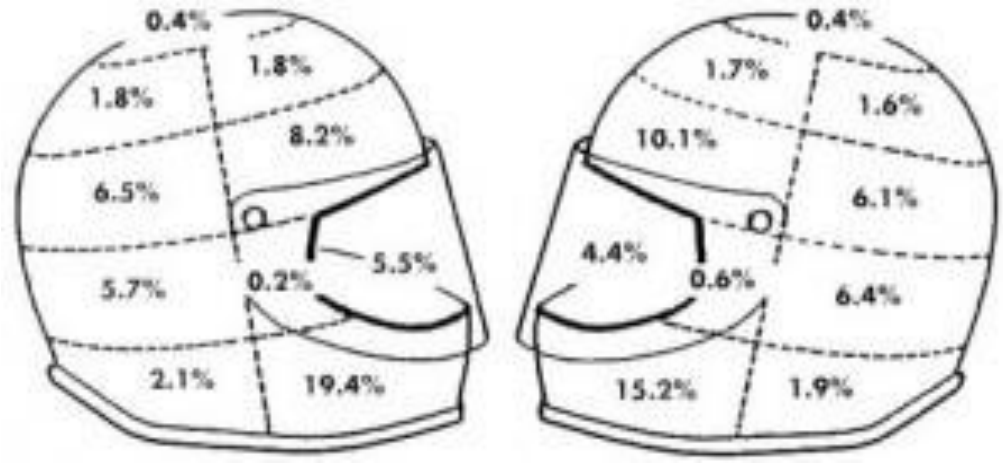

Figure 3 Dr. Otte's Helmet Diagram (c. 2008)

Figure 4 Dr. Otte (c. 2010)

Professor Dietmar Otte, the creator of the image, is a prominent accident researcher that often makes use of visual diagrams to accompany his data charts, and his notoriety in the field adds a great deal to the helmet diagram's credibility. Oddly though, despite giving clear reference to the creator of the diagram, none of the sources examined for this essay actually cite the article by Dr. Otte in which the diagram originates. Further investigation has failed to produce a research article written by Dr. Otte that includes the diagram, but the CDC does reference the image as being used in the book *Proficient Motorcycling* by D.L. Hough (2008). In addition, other helmet diagrams in articles written by Dr. Otte are very similar to the one in question, suggesting that he is indeed its architect.

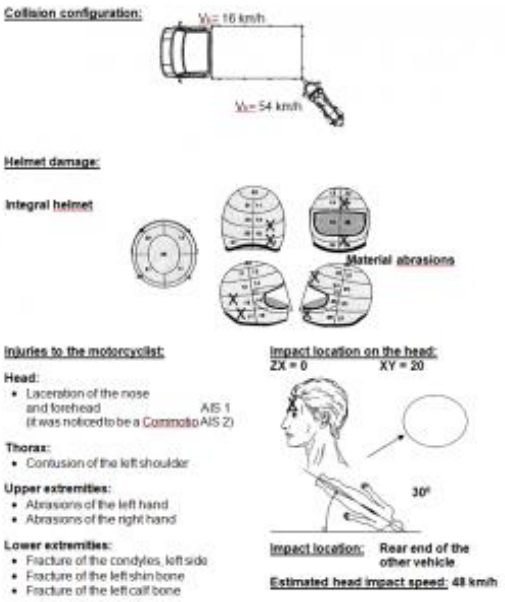
Collision configuration:
Vv= 16 km/h
Vo= 54 km/h
Helmet damage:
Integral helmet
Material abrasions
Injuries to the motorcyclist:
Head:
• Laceration of the nose and forehead AIS 1
(it was noticed to be a Commotio AIS 2)
Thorax:
• Contusion of the left shoulder
Upper extremities:
• Abrasions of the left hand
• Abrasions of the right hand
Lower extremities:
• Fracture of the condyles, left side
• Fracture of the left shin bone
• Fracture of the left calf bone
Impact location on the head:
ZX = 0
XY = 20
30°
Impact location: Rear end of the other vehicle
Estimated head impact speed: 48 km/h

Figure 5 Cost Report (co-authored by Dr. Otte) 327 p.52 (1998)

The lack of an originating document aside, the popularity of the diagram is hard to deny. Much of this fame derives from its immediate approachability. In contrast to the confusing data tables and images of the "Hurt" report, Dr. Otte's diagram can be understood almost instantly, due in large part to its simplicity. The single image maintains almost all of the data required to understand the image; the numbers' reference to impact percentages is the only missing context and is typically discussed in the webpage's text. No separate data table is required and no legend or key must share the

visual space. Aiding the simplicity is the limit to three data points: the mirrored diagram of the helmet itself created with solid lines, the grid pattern created by dotted lines, and the percentages presented within the grid spaces. The mirrored diagram acts as a parallel image, which is prudent as "comparisons are usually more effective when the information is adjacent in space rather than stacked in time" (Tufte 81). The limit on data points leaves the image, which is typically presented in a small size around 468 x 207 pixels, lean on stimulus, allowing for a faster move from "feature processing" to "pattern" recognition to perceiving "objects" (Ware 10-11). Plenty of other data points could have been included with the visual, such as number and type of injuries riders suffered from impacts to certain zones and the damage to the helmet in each zone, but each level of additional data would have slowed the recognition process and possibly required an increase in the diagram's size.

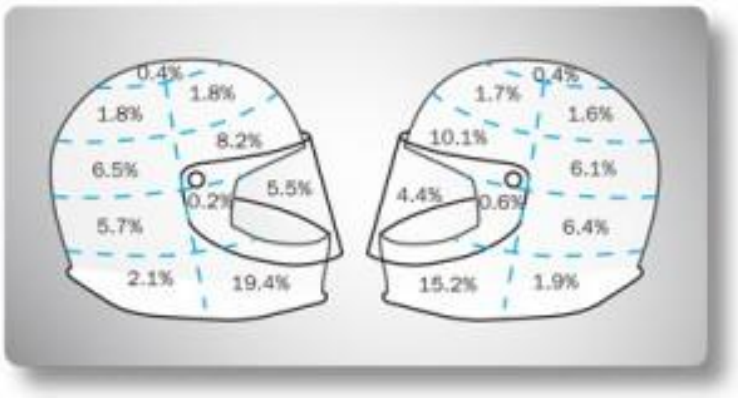

Figure 6 CDC's version of Dr. Otte's diagram (2012)

This is not to say, however, that the image is perfect. Dr. Otte's diagram has been altered in multiple ways for multiple reasons. The image used by the CDC has been sharpened, fixing the original diagram's appearance of having been a fifth generation copy. The CDC also changed the color of the dotted lines forming the zone grid to blue, creating a greater deal of contrast between the zone grid and the drawing of the helmet. Finally, the CDC created a grayscale background, allowing the helmets to appear as solid images instead of empty space. While it is true that "as the graphical features get larger, so the need for extreme luminance contrast declines" the inverse is also true (Ware 75). Because the diagram is often used in its small native resolution, the added use of contrast in the CDC version of Dr. Otte's diagram is a fruitful amendment.

Despite these changes, the CDC's version of the image does not alter the initial rhetorical impression of Dr. Otte's original diagram. The CDC uses the cleaned up version of Otte's diagram on their "Motorcycle Safety Guide: Prevention that works" webpage. Statement after statement on the site comes with a reference to a plurality of studies; much of the information is based on correcting faulty information regarding helmets that continue to exist in motorcycle culture, "There are no negative health effects from helmet use. Helmets do not restrict a rider's ability to hear important sounds or to see a vehicle in the next lane" (CDC). In connection with the rhetorical position of Dr. Otte's diagram, a simple statement of a full-face helmet's superior protection is presented, keeping with the more objective style found in the Hurt report, "The partial coverage helmet is certainly

more effective than no helmet at all, but its effectiveness is significantly below that of the full and full facial coverage helmets" (Hurt, Ouellet, and Thom 295).

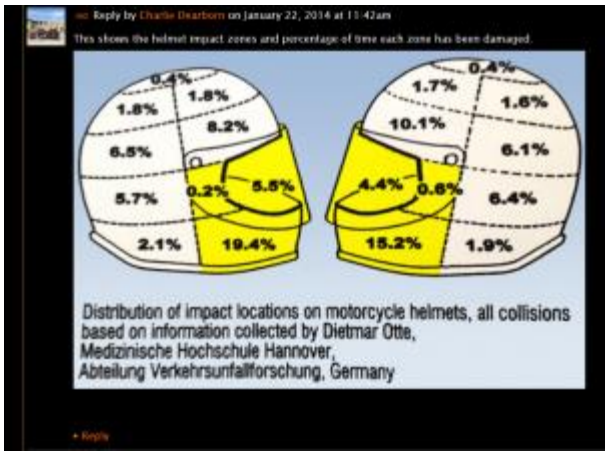

Figure 7 Main Biker Network web forum image with "pop out" highlighting (2014)

In contrast, the version of the diagram used as part of an argument in favor of full-face helmets on a web forum for motorcycle riders in Maine makes a much stronger rhetorical impression in favor of full-face helmets; the author of the altered version of the diagram is not given (Dearborn). Instead of making simple changes to the diagram to clean up the image, this version highlights in yellow the zones of the helmet only covered by full-face helmets. This in turn creates a pop-out effect, "something that pops out can be seen in a single eye fixation and experiments show that processing to separate a pop-out object from its surroundings actually takes less than a tenth of a second" (Ware 29). The rhetorical purpose is abundantly clear. Instead of relying on the viewer to make their own assessment of the data, the viewer is supplied with a pop-out image, directing their focus to the percentage of impacts only protected by a full-face helmet.

"I NEVER wear a HELMET!
they DON'T LOOK COOL!
EVERY YEAR OVER 11,000 PEOPLE DIE ON OUR ROADS AND 30,000 ARE SERIOUSLY INJURED. THAT MEANS THOUSANDS OF FAMILIES LEFT PICKING UP THE PIECES
FAMILIES TORTURED BY THE LOSS OF A LOVED ONE, CRIPPLED BY REDUCED INCOME OR THE SUDDEN NEED TO CARE FOR A RELATIVE WITH PERMANENT BRAIN DAMAGE.
THE SAD TRUTH IS THAT 40% OF THESE CASES COULD HAVE BEEN PREVENTED BY SIMPLY WEARING A HELMET. WHEN YOU THINK ABOUT IT, THERE ARE NO EXCUSES.

Figure 8 Emotional appeal image from bmwdean.com. While images of injury and death are currently often used as warnings of danger, this was not always the case. See Rachael Winterling and Sarah Lovin's essay on post-mortem photography for a discussion on an alternate use of death's visage.

Other websites use Dr. Otte's diagram in a much more direct way, employing the visual field as a rhetorical tool to suggest that anything short of a full-face helmet is no helmet at all. Jeff Dean's site *bmwdean.com* places Dr. Otte's diagram in a series of visuals that also include a helmet with crash damage to the section protecting the chin and face and a

graphic image of a crash survivor wrapped in bandages and attached to a device preventing his head from turning. Text does accompany the images, but the argument being made is easily understood without reading a word. One company that produces motorcycle helmets, Icon, even made use of the diagram by painting it onto one of their helmets. While the image is not presented anywhere on Icon's store website, it should be noted that Icon produces only full-face helmets. The creation of a helmet that prominently displays the statistics provided by Dr. Otte, even if it never finds its way onto Icon's own store website, can only help Icon's sales. The appearance of such a rhetorical visual on multiple motorcycle blogs suggests to the online motorcycle community that Icon is a company that takes rider safety as its main concern.

Figure 9 Icon helmet (2012)

The popularity surrounding Dr. Otte's image suggests a couple of things worth mentioning concerning visual data representation. Chiefly, government and private organizations concerned with safety would do well to understand why this simple diagram remains popular. Convincing people to take actions in their own best interest is not always as easy as one would assume. A human tendency to resent authoritative decrees often runs afoul of human health promotions. Dry public service announcements, while often successful on some level, are vastly improved if the message promoted is both accepted and reinforced by a portion of the public. The popularity of Dr. Otte's diagram proves that an easily understood visual diagram can move beyond a simple statement of safety and on to the front lines of a cultural argument. Such a simple diagram will not bring about a switch to universal use of full-face helmets, but more people are going to be aware of the diagram's data implications because of its wide reception.

Second, exceedingly active members of the public, other government entities, and private entities that accept and promote a government or private message are not above altering visual data representations for their own purposes. Such purposes can be as altruistic as the CDC's subtle improvements to Dr. Otte's diagram, which were meant to improve its readability without altering its rhetorical purpose. In contrast, a purpose might be only mildly altruistic, like Icon's creation of an actual helmet painted to match Dr. Otte's diagram. Such a move, while still promoting safety, necessarily promotes Icon's own business. Others still may simply attempt to add more emphasis to the message by altering the diagram in ways meant to promote one clear message; they may also attempt to change the rhetorical situation in which the diagram is found by placing it amongst other images that emphasize their message. Clearly there exists in the public a large

promotional force, and safety organizations would do well to employ the talents of such communities. Creative and simple visual data representations that are easily understood and adapted are the key.

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3. http://www.health.ny.gov/prevention/injury_prevention/children/toolkits/motorcycles/motorcycle_helmets.htm
4. https://idw-online.de/pages/de/news363013
5. http://cordis.europa.eu/cost-transport/src/cost-327.htm
6. http://www.cdc.gov/motorvehiclesafety/mc/guide/prevention.html
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